

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENICHI SONOBE, TOSHIFUMI NAKAMURA,
TAKASHI OKABE and TAKENORI OBARA

Appeal No. 1998-0741
Application 08/194,279¹

ON BRIEF

Before URYNOWICZ, HAIRSTON and DIXON, Administrative Patent Judges.

URYNOWICZ, Administrative Patent Judge.

Decision on Appeal

This appeal is from the final rejection of claims 2-11, all the claims pending in the application.

The invention pertains to an image data processor. Claim 2 is illustrative and reads as follows:

¹ Application for patent filed February 10, 1994.

An image data enlarging/smoothing processor for carrying out an interpolation process of pixels simultaneously with a pixel density conversion of binary image data, comprising:

connective pattern detecting means for detecting a form of a connective pattern of reference pixels adjoining to a marked pixel;

enlarging/smoothing processing means operating such that said processing means enlarges the marked pixel on the basis of enlargement ratios in fast and slow scan directions, thereby enlarging and smoothing the marked pixel on the basis of the form of the connective pattern of the reference pixels and processing positions in the fast and slow scan directions;

said connective pattern detecting means detecting forms of four directions of a black-pixel connective pattern of 1 : 1 and forms of eight directions of black-pixel connective patterns of

1 : 2 to 1 : n (n being a positive integer); and

said enlarging/smoothing processing means enlarging the marked pixel in accordance with an enlargement ratio, and interpolating the enlarged pixel in accordance with the detected form of the connective pattern.

The references relied upon by the examiner as evidence of obviousness are:

Abe et al. (Abe) 1989	4,833,531	May 23,
Nakajima et al. (Nakajima) 1989	4,841,375	Jun. 20,
Sakuragi 1990	4,893,258	Jan. 09,
Nakamura 1992	5,168,373	Dec. 01,
Chen et al. (Chen) 1995	5,438,630	Aug. 01,

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima in view of Nakamura and Chen.

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Claims 4-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima in view of Nakamura, Chen and Abe.

Claims 8-11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima in view of Nakamura, Chen and Sakuragi.

The respective positions of the examiner and the appellants with regard to the propriety of these rejections are set forth in the final rejection (Paper No. 10) and the examiner's answer (Paper No. 23) and the appellants' brief (Paper No. 17) and reply brief (Paper No. 24).

Opinion

After consideration of the positions and arguments presented by both the examiner and the appellants, we have concluded that the rejections should not be sustained.

Appellants argue in their brief that the examiner has provided no proper motivation for applying Nakajima, Nakamura and Chen to the claimed invention. In response to appellants' argument, the answer at page 7 states that the above three references all relate to document image processing and that the combined art "...is to improve the document image

enlargement process." We note that at page 4 of the final rejection, the examiner stated,

It would have been obvious to one of ordinary skill in the art that Nakajima and Nakamura can apply the scanning detection using forms of 4 and 8 directions of pixels as taught by Chen because doing so would efficiently enlarge the image in the bounding box and simultaneously avoid the image quality deterioration.

We agree with appellants that no proper motivation for combining the teachings of the above three references has been set forth by the examiner. The aforementioned statement in the final rejection sets forth no motivation for combining Nakajima and Nakamura. Furthermore, the examiner has provided no explanation in support of his conclusion to the effect that one of ordinary skill in the art would have recognized that combining Chen with Nakajima and Nakamura would efficiently enlarge the image in the bounding box and simultaneously avoid image quality deterioration. The examiner has not drawn attention to any disclosure in the prior art or given any rationale which supports his conclusion. Accordingly, in the final rejection the examiner did not establish his burden of showing some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art that

would have led that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

The examiner's conclusion in the answer to the effect that motivation to combine the teachings of Nakajima, Nakamura and Chen would have been to improve the document image enlargement process is essentially the same as that which he argued in the final rejection for combining Chen with Nakajima and Nakamura and is not persuasive for essentially the same reasons.

We also agree with appellants that even if the references are combined, they do not teach or suggest the claimed invention. The examiner relies on Nakajima at column 12, lines 18-20, for a pattern detector for detecting a form of a pattern of reference pixels. We agree with the examiner's interpretation of Nakajima. However, the claims relate to detecting means for detecting a form of a connective pattern of reference pixels adjoining a marked pixel. Whereas Nakajima has no marked pixel, it cannot be said that the reference meets the limitation of independent claims 2 and 3 calling for "connective pattern detecting means for detecting

a form of a connective pattern of reference pixels adjoining to a marked pixel". Nor does Nakajima meet the limitation of independent claim 8 which recites "detecting means for detecting a connective pattern of reference pixels adjoining to the marked pixel in the input image data".

Still further, as to independent claims 2 and 3, Chen does not teach "pattern detecting means detecting forms of four directions of a black-pixel connective pattern of 1 : 1 and forms of eight directions of black-pixel connective patterns of 1 : 2 to 1 : n (n being a positive integer)". Chen merely discloses that in place of 4-connected components, analysis using 8-connected components is possible (column 8, lines 17-19). Analysis using both components together as in appellants' device is not taught by Chen.

Whereas we will not sustain the rejections of independent claims 2, 3 and 8, we will not sustain the rejections of dependent claims 4-7 and 9-11.

REVERSED

STANLEY M. URYNOWICZ, JR.)

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Administrative Patent Judge)	
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)	BOARD OF PATENT
KENNETH W. HAIRSTON)	
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